

Work Order ID 51297

August 15, 2009 9:59:38 AM

Page 1

Item ID: D3688-3

Revision ID: B

Item Name: STUD

Start Date: 08/14/2009 Start Qty: 14.00

Required Date: 08/28/2009 Req'd Qty: 14.00

Reference:

Accept

Setup Start

Stop

Cust Item ID:

Customer:

Approvals:

Process Plan: MF

Date: 09-08-15

Tooling:

Date:

Run Start

QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D3688

Rev B

100



BAND SAW

0.00

Bandsaw

Memo

0.00

Jcaspa Bandsaw

DO NOT USE CHOP SAW

☐ Cut blank 9.424" long

09.09.28

14 0

110



DOOSAN LATHE

0.00

Doosan

Memo

0.00

Doosan Lathe

1-Turn as per Folio FA717 Rev: A & Dwg D3688 Rev: B ☐ 2-Deburr per dwg D3688

09.09.28

14 0

ATO

120



QC2- Inspect parts off machine FAI/FAIB

0.00

QC

Memo

0.00

Quality Control

09.09.28

14 0

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D3688-3 PAR #: _____ Fault Category: Unmachined parts NCR: Yes No DQA: [Signature] Date: 05-10-20
 Resolution: Scrap Disposition: Scrap QA: N/C Closed: [Signature] Date: 05-10-20






NCR: <u>51297</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
<u>05-09-29</u>		<ul style="list-style-type: none"> - Thread vibration occurred. - Tried to fix w die. - Die wrecked majority of thread. - Vibration can occur when tail stock is not close enough to workpiece. 	<u>[Signature]</u>	<ul style="list-style-type: none"> - Bring tail stock closer to workpiece - Scrap + do not replace. 	<u>05-09-29</u>	<u>[Signature]</u>	<u>[Signature]</u>	<u>05-09-30</u>
		<u>R.C. PROCESS.</u>						



NOTE: Date & initial all entries




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Item ID:	D3688-3	Accept		Setup	Start	
Revision ID:	B				Stop	
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Start Date:	08/14/2009	Start Qty:	14.00		Cust Item ID:	
Required Date:	08/28/2009	Req'd Qty:	14.00		Customer:	
Reference:						

Approvals:	Process/Plan:	Date:	Tooling:	Date:	Run	Start	
	QC:	Date:	SPC (Y/N):	Date:		Stop	

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130		0.00							
	CONVENTIONAL LATHE					14	0		
Lathe Conv	Memo	0.00							
Conventional Lathe	Face to finished length as per dwg D3688 AND center drill as per Dwg D3688				09.09.29				
140		0.00							
	QC2- Inspect parts off machine FAI/FAIB					14	0		
QC	Memo	0.00							
Quality Control									
150		0.00							
	DOOSAN LATHE					13	1		
Doosan	Memo	0.00							
Doosan Lathe	1- Turn as per Folio FA717 Rev: <u>AA</u> & Dwg D3688 Rev: <u>B</u> <input type="checkbox"/> 2-Deburr per dwg D3688								

W/O:		WORK ORDER CHANGES					
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
		/						

NOTE: Date & initial all entries

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Item ID: D3688-3

Accept



Setup Start



Revision ID: B

Stop



Item Name: STUD

Start Date: 08/14/2009 Start Qty: 14.00



Cust Item ID:

Required Date: 08/28/2009 Req'd Qty: 14.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start



Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

160

QC2- Inspect parts off machine FAI/FAIB

0.00



QC

Memo

0.00

09.09.29

13

1

Quality Control

170

QC8- Inspect parts - second check

0.00



QC

Memo

0.00

SA 09/09/30

13

1

Quality Control

180

PURCHASING

0.00



Purchasing

Memo

0.00

CY

09/10/09

(13)

Purchasing

Issue P/O: PO 10557 ☐ LPI Per ASTM 1417 LEVEL
2 ☐ Certificate of conformaty is required

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
		/						

NOTE: Date & initial all entries

Work Order ID 51297

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Item ID: D3688-3

Accept



Setup Start



Revision ID: B

Stop



Item Name: STUD

Start Date: 08/14/2009 Start Qty: 14.00



Cust Item ID:

Required Date: 08/28/2009 Req'd Qty: 14.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

190

Receive & Inspect for Damage & Mat'l Certs

0.00



Packaging

Memo

0.00

Packaging

Ensure certificate of conformity is attached

09/10/13 (13)

200

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

09 10 13 (13)

210

Identify as per dwg & Stock Location: _____

0.00



Packaging

Memo

0.00

Packaging

09/10/13 (13)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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		/						

NOTE: Date & initial all entries

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Item ID: D3688-3

Accept



Setup Start



Revision ID: B

Stop



Item Name: STUD

Start Date: 08/14/2009 Start Qty: 14.00



Cust Item ID:

Required Date: 08/28/2009 Req'd Qty: 14.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

220

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

09/10/14 *[Signature]*
PL 09-10-13

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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NOTE: Date & initial all entries

Picklist Print

August 15, 2009 9:59:38 AM

Page 1

Work Order ID: 51297

Parent Item: D3688-3RevB

Parent Item Name: STUD



Comments:

Start Date: 08/14/2009

Required Date: 08/28/2009

Start Qty: 14.00

Required Qty: 14.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
M174PH-H900R1.000		Purchased	No			100	f	14.2700	11.6126			
												
17-4SS H900 ROUND BAR 1.00												
												

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

MAT

14.27

110213

0.3

110750

11.26

110990

0.87

111055

1.84

08.09.29 m12570

11.08'

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

• NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order: 51297
Description: Stud		Part Number: D3688-3
Inspection Dwg: D3688	Rev: B	Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.695	+/-0.010	.695	/			
0.625	+0.004/-0.000	.627	/			
1.25	+0.000/-0.03	1.240	/			
118°	0.5°	118°	/			
R0.03	+/-0.030	R0.03	/			
0.11 Ref	+/-0.030	.11	/			
90°	0.5°	90°	/			
Ø0.189	+0.005/-0.001	.190	/			
1.31	+/-0.030	1.335	/			
1.65	+/-0.030	1.655	/			
0.870	+0.000/-0.010	.865	/			
Ø0.659	+0.000/-0.015	.651	/			
9.324	+/-0.015	9.332	/			
2.90	+/-0.030	2.90	/			
3/4-16UNF-2A	N/A	2A	/			
0.075 x 45°	+/-0.010 x 0.5°	.075 x 45°	/			
0.370	+0.000/-0.010	.365	/			
Ø0.189	+0.005/-0.001	.190	/			
R0.25	+/-0.030	R.25	/			
R0.50	+/-0.030	R.50	/			
			/			

Measured by: <i>[Signature]</i>	Audited by: <i>[Signature]</i>	Prototype Approval: N/A
Date: 09.09.29	Date: 09/09/29	Date: N/A

Rev	Date	Change	Revised by	Approved
A	09.05.11	New Issue	KJ <i>[Signature]</i>	<i>[Signature]</i>

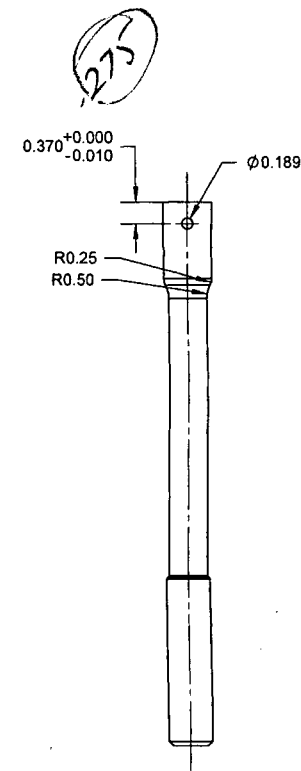
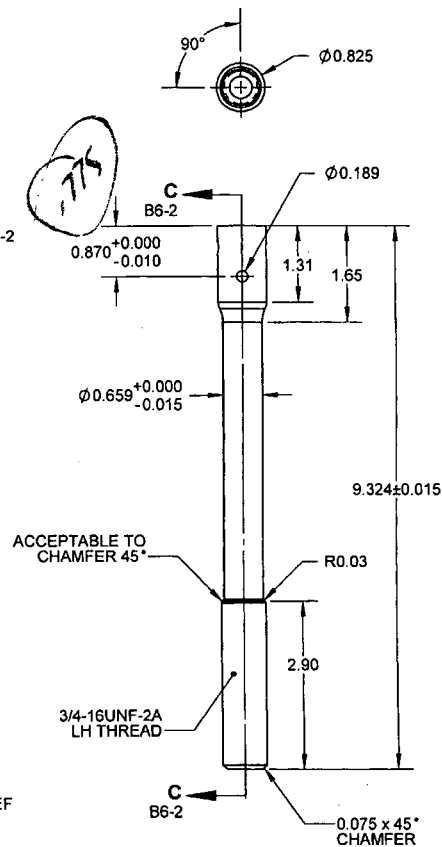
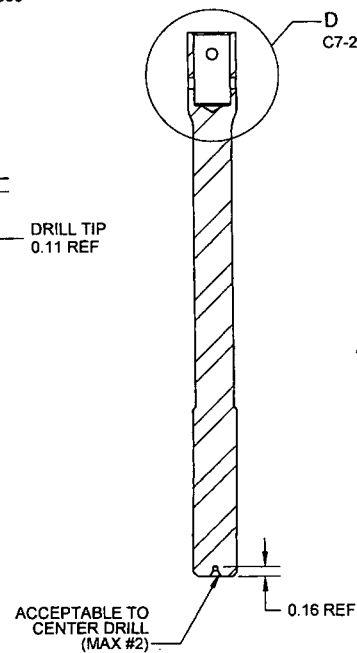
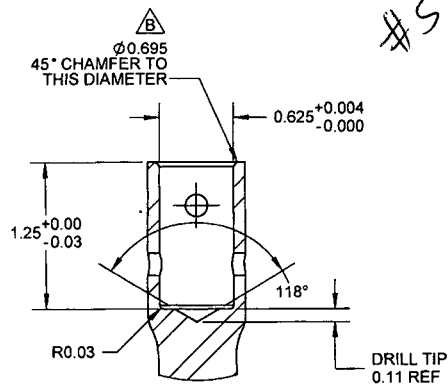
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NOTE: Date & initial all entries



UNDER REVIEW
09/03/10
CHANGE CENTER DRILL
TO #4

RELEASED
08/12/15

- NOTES:
- 1) MATERIAL: 17-4PH STAINLESS STEEL ROUND BAR PER AMS 5643 H-900 CONDITION
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: NONE
 - 7) WEIGHT: 0.97 lb
 - 8) LPI PER ASTM 1417 LEVEL 2

DESIGN	RF	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO.	REV. B
MFG. APPR.	RF	D3688	SHEET 2 OF 4
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	STUD	NTS
DATE	08.11.24	COPYRIGHT © 2008 BY DART AEROSPACE LTD	
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.			

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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• **NOTE:** Date & initial all entries



LIQUID PENETRANT TEST REPORT

P- 153C

PAGE 1 OF

CLIENT DART Aerospace DATE Oct-8-2009 TIME AM ☒ P
ATTENTION LINDA/CHANTEL ACUREN JOB NO. 188-08-001567
ADDRESS 1270 ABENDEEP ST, HAWKESBURY PO/VO NO. - 10557
ON. K664 1K7 WORK LOCATION SAME
ACCEPTANCE STD. ASTM 1417 REV./DATE 200
PROJECT F.P.I. on CROSS TUBES AND MACHINED PARTS
ITEM(S) EXAMINED 10 CROSS TUBES
13 MACHINED PARTS

JOB DESCRIPTION PROCEDURE NO. LT- REV./DATE TECHNIQUE NO. LT- REV./DATE
PART NO. STAINLESS STEEL MATERIAL ALUMINUM THICKNESS N/A
SCOPE WET FLOUORESCENT LIQUID PENETRANT INSPECTION
CARRIED OUT 100% EXTERNAL

TEST DETAILS
METHOD ☒ FLUORESCENT ☐ VISIBLE ☒ WATER WASH ☐ SOLVENT REMOVABLE ☐ POST EMULSION
FAMILY BRAND MAGNA FLUX BLACK LIGHT S/N 16459 ☐ OUTPUT > 1000 μ W/cm² ☐ AMBIENT < 1000 μ W/cm²
PENETRANT 2L-67 MINIMUM DWELL TIME 45 MIN. LIGHTING EQUIP. ☐ FLASHLIGHT ☐ TROUBLELIGHT ☐ OUTPUT > 100 fc @ 5 ft
PENETRANT REMOVER H2O MINIMUM DRY TIME >10 MIN. OTHER LABING
DEVELOPER SKD 52 MINIMUM DWELL TIME 10 MIN. LIGHT METER S/N CAL DUE DATE
DEVELOPER TYPE ☒ NON AQUEOUS ☐ AQUEOUS ☐ DRY

TEST SURFACE
SURFACE CONDITION ☐ AS GROUND ☐ AS WELDED ☒ MACHINED ☐ SHOT BLASTED ☐ CLEAN BARE METAL
SURFACE TEMPERATURE ☐ < -4°C/ 20°F ☐ -4°C/ 20°F TO 10°C/50°F ☒ 10°C/50°F TO 52°C/125°F ☐ > 52°C/125°F

RESULTS- (☒ METRIC ☐ IMPERIAL)

1 - W.O. 51939 - CROSS TUBE X
1 - W.O. 51940 - CROSS TUBE X
1 - W.O. 52054 - CROSS TUBE X
1 - W.O. 52055 - CROSS TUBE X
~~1 - W.O. 51297 - CROSS TUBE~~ ✓
1 - W.O. 51937 - CROSS TUBE X
1 - W.O. 51938 - CROSS TUBE X
1 - W.O. 52052 - CROSS TUBE X
1 - W.O. 52053 - CROSS TUBE X
1 - W.O. 50982 - CROSS TUBE X
~~1 - W.O. 50983 - CROSS TUBE~~ X
13 - W.O. 51297 - STUDS X

ALL PARTS EXAMINED. HAVE
BEEN FOUND ACCEPTABLE
TO STANDARD.

M 09 10 13

Scope of Services
The agreement of Acuren Group Inc. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested services. It is expressly understood that all descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren Group Inc. based on information and assumptions supplied by the owner/operator and are not intended nor can they be construed as representations or warranties. Acuren Group Inc. is not assuming any responsibilities of the owner/operator and the owner/operator retains complete responsibility for the engineering, manufacture, repair and use decisions as to data or other information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of the services referred to herein exceed the amount paid for such services.

Standard of Care
In performing the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied, is made or intended by Acuren Group Inc.

SIGNATURES
CLIENT REPRESENTATIVE MATTHEW MURDOCH SIGNATURE Matthew Murdoch DTR # E-27843
TECHNICIAN (SIGNATURE): Mike Johnston
NAME (PRINT): Mike Johnston 1st TECHNICIAN
CGSB LEVEL 2 SNT LEVEL 2 CGSB LEVEL 2 SNT LEVEL 2
CGSB REG. NO. 6060 CGSB REG. NO. 6060
REPORT REVIEWED BY: NAME INIT